

CLAIMS

1. A method for separating and purifying a cationic protein using an electro dialysis apparatus,

5 wherein the electro dialysis apparatus comprises an electro dialysis bath having an anode and a cathode, and the electro dialysis bath comprises an anode compartment, a raw material loading compartment, a concentration compartment, and a cathode compartment in this order from the anode side,

10 wherein the anode compartment and the raw material loading compartment are divided from each other by a porous membrane made of a polymer having an anion exchange group,

 the raw material loading compartment and the concentration compartment are divided from each other by a porous membrane made of
15 a polymer having a cation exchange group, and

 the concentration compartment and the cathode compartment are divided from each other by a microporous membrane, and

 wherein the method comprises the steps of:

 (1) loading a cationic protein-containing aqueous solution into the
20 raw material loading compartment and loading an electrolytic solution into the anode compartment, the concentration compartment, and the cathode compartment;

 (2) applying a current to the electro dialysis apparatus; and

 (3) collecting a solution containing a cationic protein from the
25 concentration compartment.

2. The method of claim 1, wherein the cationic protein is lactoferrin.

3. The method of claim 1 or 2, wherein the current has a current density of 0.1 to 50 mA/cm².
- 5 4. The method of any one of claims 1 to 3, wherein in the step (1), an anion exchanger or a chelating agent is further added to the raw material loading compartment.
- 10 5. The method of any one of claims 1 to 4, wherein a face on the raw material loading compartment side of the cation exchange membrane is coated with an anion exchange membrane.